

02231-TREE PROTECTION AND PRUNING (REVISED 2013)

PART 1-GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the protection and pruning of trees that interfere with, or are affected by, execution of the Work, whether temporary or new construction.
- B. Related Sections include the following:
 - 1. Division 1 Section "Summary of Work" for limits placed on Contractor's use of the site.
 - 2. Division 1 Section "Construction Facilities and temporary Controls" for temporary tree protection.
 - 3. Division 2 Section "Site Clearing" for removal limits of trees, shrubs, and other plantings affected by new construction.
 - 4. Division 2 Section "Landscaping": for tree and shrub planting and transplanting, tree support systems, and soil materials.
- C. The Contractor shall visit, inspect and become thoroughly familiar with the site and the scope of work. The Contractor will judge the conditions that will exist when he carries out his contract.
- D. The Contractor shall meet with the Owner's Representative to determine the point of access and marshaling area to be utilized to perform this work.
- E. Refer to the related guidelines as indicated, and/or consult with the City Forester or the Designee assigned to the project.
- F. Furnish all labor, materials, tools, and equipment necessary to complete the work indicated on drawings and as required herein. This shall include:
 - 1. Proper root cutting.
 - 2. Erecting the required fencing when needed.
 - 3. Installing the correct and necessary tree barrier devices.
 - 4. Protecting the soil around trees from compaction.
- G. The City Forester or the designee will be informed of all construction projects, especially when trees are involved.
- H. The City Forester or the designee will survey the site to set up tree protection devices and determine what the Contractor needs to do, before construction begins.
- I. The City Forester or the designee shall be informed of:
 - 1. Soil grade changes adjacent to trees.
 - 2. Probable trenching through roots.
 - 3. Location of stored heavy equipment.
- J. Paths heavy equipment will take during construction project, to avoid root compaction and root breakage.
- K. The City Forester shall be notified during the project design phase, to aid in tree protection during the primary phase.
- L. When equipment must be used in close proximity of the trunk, the entire tree trunk shall be protected by banding large 2"x4" wooden boards to avoid direct contact. The soil shall be protected from compaction with a 6-10" layer of wood chip mulch.

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1.3 SUBMITTALS

- A. Maintenance Recommendations: From a qualified arborist for care and protection of trees affected by construction during and after completing the Work.

1.4 QUALITY ASSURANCE

- A. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."
 - 1. Before starting tree protection and pruning, meet with representatives of authorities having jurisdiction, Owner, Architect, consultants, and other concerned entities. Review tree protection and pruning procedures and responsibilities. Notify participants at least three working days before convening conference. Record discussions and agreements and furnish a copy to each participant.

PART 2-PRODUCTS

2.1 MATERIALS

- A. Drainage Fill: Selected crushed stone, or crushed or uncrushed gravel, washed, ASTM D 448, Size 24, with 90 to 100 percent passing a 2-1/2-inch sieve and not more than 10 percent passing a 3/4-inch sieve.
- B. Topsoil: Fertile, friable, surface soil, containing natural loam and complying with ASTM D 5268. Provide topsoil, that is free of stones larger than 1 inch in any dimension and free of other extraneous or toxic matter harmful to plant growth. Obtain topsoil only from well-drained sites where soil occurs in depth of 4 inches or more; do not obtain from bogs or marshes.
- C. Filter Fabric: Manufacturer's standard, pervious, geotextile fabric of polypropylene, nylon, or polyester fibers.
- D. Construction fence with T-posts.

PART 3-EXECUTION

3.1 PREPARATION

- A. Temporary Fencing: Install temporary fencing located as indicated or outside the drip line of trees to protect remaining vegetation from construction damage.
 - 1. Install construction fencing.
- B. Protect tree root systems from damage due to noxious materials caused by runoff or spillage while mixing, placing, or storing construction materials. Protect root systems from flooding, eroding, or excessive wetting caused by de-watering operations.
- C. Do not store construction materials, debris, or excavated material within the drip line of remaining trees. Do not permit vehicles or foot traffic within the drip line; prevent soil compaction over root systems.
- D. Existing trees to remain shall be protected at all times during the Contract period, by using fencing (i.e., snow fencing, construction fencing with metal staking). Tree protection fencing shall be maintained by the Contractor during construction. The protection area to be fenced (2') outside the drip line of the tree unless otherwise required by the Owner's Representative. No equipment shall be parked, driven or material stockpiled within the drip line area of the existing trees to remain. No gasoline, oil, chemicals, concrete or other material shall be dumped anywhere on site. Where vehicle or equipment traffic is necessary in the protection area of a tree, the soil shall be protected from compaction by (6"-10") layer of wood chip mulch.

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3.2 EXCAVATION

- A. Install shoring or other protective support systems to minimize sloping or benching of excavations.
- B. Do not excavate within drip line of trees, unless otherwise indicated.
- C. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems.

3.2 EXCAVATION

- A. Where utility trenches are required within drip line of trees, tunnel under or around roots by drilling, auger boring, pipe jacking, or digging by hand.
 - 1. Root Pruning: Prior approval is needed from the City Forester or Designee to cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots with sharp pruning instruments; i.e. chain saw, reciprocating saw or pruning saw. Stump grinding equipment allowed so long as the final cut is clean, not ragged. Do not break, chop, rip or otherwise mangle roots.

3.3 RE-GRADING

- A. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade beyond drip line of trees. Maintain existing grades within drip line of trees.

3.4 TREE PRUNING

- A. The Forestry Division will conduct all pruning if limb elevation is needed to avoid equipment contact.

3.5 TREE REPAIR AND REPLACEMENT

- A. Aerate surface soil, compacted during construction, 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch- diameter holes a minimum of 12 inches deep at 24 inches o.c. Backfill holes with an equal mix of augered soil and sand. Aeration of the surface soil may be required due to compaction during construction.
- B. Any trees damaged during construction shall be promptly reported to the Owner's Representative, who shall contact the City Forester or designee for an assessment of damages. The Contractor will be responsible for repair or replacement to the satisfaction of the City Forester or designee.

3.6 DISPOSAL OF WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, and excess chips from Owner's property. Burning is not permitted, dispose off site legally.

END OF SECTION 02231 – TREE PROTECTION AND PRUNING (REVISED 2013)